

**United States Department of Energy  
Nuclear Criticality Safety Program (NCSP)**

**Hands-On Training  
Water-Moderated Critical Experiments  
Sandia National Laboratories**

<b>Day</b>	<b>Module</b>	<b>Title</b>
<b>Monday</b> <b>8:30 AM - 5:00 PM</b>	<b>Module 01</b>	<b>Fundamentals of Nuclear Criticality Safety – Criticality Parameters</b>
	<b>Module 02</b>	<b>Experiment Bases for Nuclear Criticality Safety</b>
	<b>Module 03</b>	<b>Light-Water Reactor (LWR) Fuel Paradigm</b>
	<b>Module 04</b>	<b>Critical-Measurement Accident - Chelyabinsk-40 – 1958</b>
	<b>Module 05</b>	<b>Subcritical Multiplication</b>
	<b>Module 06</b>	<b>Design of the SPRF/CX Critical Experiment</b>
<b>Tuesday</b> <b>8:00 AM - 5:00 PM</b>	<b>Module 07</b>	<b>Experiment #1 Approach to Critical on Fuel Loading</b>
	<b>Module 08</b>	<b>Nuclear Instrumentation</b>
	<b>Module 09</b>	<b>Critical-Measurement Accident - Kurchatov - May 1971 [1]</b>
	<b>Module 10</b>	<b>Critical-Measurement Accident - Kurchatov - May 1971 [2]</b>
	<b>Module 11</b>	<b>SPRF/CX Reactor Theory</b>
	<b>Module 12</b>	<b>Reactor Kinetics</b>
<b>Wednesday</b> <b>8:00 AM- 5:00 PM</b>	<b>Module 13</b>	<b>Experiment #2 Approach to Critical on Moderator Height</b>
	<b>Module 14</b>	<b>Critical-Measurement Accident - Mol/VENUS - 1965</b>
	<b>Module 15</b>	<b>Nuclear Criticality Safety Data and Limits</b>
	<b>Module 16</b>	<b>The International Criticality Safety Benchmark Evaluation Project</b>
	<b>Module 17</b>	<b>Results from the Sandia Critical Experiments</b>
<b>Thursday</b> <b>8:00 AM - 5:00 PM</b>	<b>Module 18</b>	<b>Experiment #3 Approach to Critical on Fuel Lump Separation</b>
	<b>Module 19</b>	<b>Critical-Measurement Accident - Saclay/ALIZA – 1960</b>
	<b>Module 20</b>	<b>Critical-Measurement Accident - Arzamas – 1960</b>
	<b>Module 21</b>	<b>Critical-Measurement Accident - Los Alamos - 1945/46</b>
	<b>Module 22</b>	<b>ANS -1 Sections 3.0, 4.0, 5.0</b>
	<b>Module 23</b>	<b>Reactor Fuel Depletion/Burnup</b>
	<b>Module 24</b>	<b>Light-Water Reactor (LWR) Design</b>
<b>Friday</b> <b>8:00 AM - 3:00 PM</b>	<b>Module 25</b>	<b>Experiment #4 Interior Fuel Rod Removal</b>
	<b>Module 26</b>	<b>Review of Experiments</b>
		<b>Feedback From Pilot Course Attendees</b>

